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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,076	02/19/2004	Chun-Cheng Lin	SINICA-08757	4532
72960	7590	01/23/2009		
Casimir Jones, S.C. 440 Science Drive Suite 203 Madison, WI 53711				
EXAMINER				
ARNOLD, ERNST V				
ART UNIT		PAPER NUMBER		
1616				
MAIL DATE		DELIVERY MODE		
01/23/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/782,076

**Applicant(s)**

LIN ET AL.

**Examiner**

ERNST V. ARNOLD

**Art Unit**

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 11 and 16-20 have been cancelled. Claims 1-10 and 12-15 are pending and under examination.

#### **Withdrawn rejections:**

Applicant's amendments and arguments filed 10/15/08 are acknowledged and have been fully considered. Any rejection and/or objection not specifically addressed below is herein withdrawn by the present Examiner.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-10 and 12-15 remain/are rejected under 35 U.S.C. 103(a) as being unpatentable over Andres et al. (US 7186398).

Applicant claims a composition comprising a gold core nanoparticle consisting essentially of gold and a plurality of carbohydrate molecules attached to said gold particles comprising at least 150 carbohydrate molecules.

**Determination of the scope and content of the prior art**

**(MPEP 2141.01)**

Andres et al. teach a nanoparticle comprising Fe/Au having a diameter from about 5 nm to about 50 nm (column 2, lines 51-52). Column 2, line 59 through column 3, line 7 teach that the Fe/Au nanoparticle may further comprise a plurality of organic molecules linked to the surface of the core. These biomolecules can be selected from proteins, peptides, carbohydrates, etc. Column 6, lines 52-54 teach that the particles upon formulation can be captured in an aqueous liquid.

**Ascertainment of the difference between the prior art and the claims**

**(MPEP 2141.02)**

1. Andres et al. do not teach the specific properties of the carbohydrates (i.e. number of molecules, whether or not it is thiolated or the binding capacity or the carbohydrate to a target molecule).

**Finding of prima facie obviousness**

**Rational and Motivation (MPEP 2142-2143)**

1. Although Andres et al. do not teach the specific properties of the carbohydrates, it is the position of the examiner that those limitations would have been obvious. As mentioned above, Andres et al. teach that carbohydrates can be linked to the surface of the particles. Andres et al. broadly disclosures carbohydrates, it is therefore the position of the examiner that this disclosure can encompass all carbohydrates, including those that are greater than 150 molecules and those that are thiolated and the binding capacity or the carbohydrate to a target molecule.

Conclusion Claims 1-10 and 12-15 are rejected.

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**Response to arguments:**

Applicant asserts that Andres et al. do not teach: 1) a nanoparticle consisting essentially of gold because there is iron present; and 2) 150 or more carbohydrate molecules on the nanoparticle.

Applicant correctly states that the phrase "consisting essentially of" limits the scope of the claim to the specified materials and "those that do not materially affect the

basic and novel characteristic(s)" of the claimed invention. The presence of iron does not materially affect the basic and novel characteristics of the claimed invention. The gold still functions as gold. Applicant appears to be arguing that the presence of iron in the particles subtracts from the number of potential binding sites to gold that would inhibit 150 or more carbohydrate molecules from binding but this is mere speculation without proof. Andres et al. teaches that the invention can have as little as 0.01% iron and 99.99% gold (column 7, lines 39-41). It is unthinkable that such a small amount of iron would have such a large effect as asserted by Applicant because such nanoparticles are essentially pure gold of 99.99% quality.

With regards to the number of carbohydrate molecules, the U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that a subsequent applicant may present previously unmeasured characteristics. When as here, the prior art appears to contain the exact same ingredients and applicant's own disclosure supports the suitability of the prior art composition as the inventive composition component, the burden is properly shifted to applicant to show otherwise. Furthermore, since the diameter is the same as instantly claimed, then the surface area would be the same and the number of attached carbohydrate molecules must be directly correlated to the number available binding sites on the surface. The number of carbohydrate molecules attached to the nanoparticles being at least 150 is intrinsic to the composition of Andres et al.

***Conclusion***

No claims are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernst V. Arnold whose telephone number is 571-272-8509. The examiner can normally be reached on M-F (7:15 am-4:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ernst V Arnold/  
Examiner, Art Unit 1616